



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

D412-596-203
Job Sheet 179830



original 152058

Part No: D412-596-203

Job Qty: 1 ea

Part Name: Stainless Steel Aft Crosstube - Extended Height 39"



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 6/22/18

Job Tracking No:

Due Date: 7/31/18

Created By: Linda Lacelle

Type: SOLD

Description:

Note: DWG D412-596-203 REV.C IPP REV:A NEW ISSUE JFS 13/03/22 VERIFY BY:DD

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard	Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier Lead Time	
90	Start up Operation	1 Ea	7/31/18	7/31/18	0.00	0.00	Start Up Crosstubes-2	
190	QC	1 pcs	7/31/18	7/31/18	0.00	0.00	QC14	
200	Crosstubes	1 pcs	7/31/18	7/31/18	0.00	1.16	Crosstubes-2	18-08-13
210	QC	1 pcs	7/31/18	7/31/18	0.00	0.00	QC5	18-08-16
225	DC	1 pcs	7/31/18	7/31/18	0.00	0.00	DC	DA 65
240	Packaging	1 pcs	7/31/18	7/31/18	0.00	0.00	Packaging3-2	21 9-85
250	QC21-FG	1 Ea	7/31/18	7/31/18	0.00	0.00	QC21	21 9-85

Part Op 200 - 1- **IF NOT ALREADY PRESENT ON CHAFFING SHEILD.** Apply a thin coat of proseal 890 per QSI 015 on
Descriptions: inside concave surface of chafing shield and let cure per manufacturer's instructions. 2- Locate center support onto
crosstube as per dwg. 3- Abrade mating surfaces of support and crosstube with 180 grit sandpaper, clean the area with
4105S wash 'n' wipe 4- Apply layer of scoth-weld DP460 on concave surface of supports per QSI 015 & per DWG. A/R
scoth-weld DP460 BATCH #: 138676 5- Install support on crosstube as per dwg. note 15-16. 6- Install prosealed
chafing shield onto crosstube by applying a thin coat of proseal 890 onto crosstube per dwg. note 21. Be sure to eliminate
any air gaps. A/R Proseal 890 Batch: 138848 7- Torque clamps on chafing shield to 40-50 IN-LBS. START
CURE TIME: 18-08-13 FINISH CURE TIME: 18-08-14 PRIOR TO PACKAGING RE-CHECK TORQUE
ON CLAMPS AFTER C

210 - PRIOR TO PACKAGING RE-CHECK TORQUE ON CLAMPS AFTER CURED FOR 24H.

225 - Photocopy bluefile & type labels per PPPD412-596-203 CHG002

240 - Identify and pack for shipping as per PPPD412-596-203 Location: _____ PPP Rev: _____

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D4910-1	Chaffing Shield 5049624	2 Ea (2 ea)	90-Start up Operation	
MS21920-26	Clamp 5048311	4 Ea (4 ea)	200-Crosstubes	
D5380-1	Support 5097633	1 Ea (1 ea)	200-Crosstubes	
D5380-3	Support Base 5069794	1 Ea (1 ea)	200-Crosstubes	
NAS1805-4P	Nut 5043784	8 pcs (8 ea)	200-Crosstubes	
NAS6704-21	Bolt 5043791	8 pcs (8 ea)	200-Crosstubes	

NAS6704-22 Bolt 5102937 x8

QA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

Job Allocations				
Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	D4910-1	2	30	0
200-Crosstubes	D5380-1	1	1	0
	D5380-3	1	2	0
	MS21920-26	4	66	0
	NAS1805-4P	8	136	0
	NAS6704-21	8	152	0

Part Specifications					
Spec No	Description	Target/Tolerance	Limits	Type	Special Comments
1	Crosstube Assembly(412 Hi Hi Aft)	0.500Inches ± 0.010	0.510 0.490	Radius	
2	Crosstube Assembly(412 Hi Hi Aft)	8.440Inches ± 0.060	8.500 8.380		
3	Crosstube Assembly(412 Hi Hi Aft)	3.250Inches + 0.000 - 0.010	3.250 3.240		
4	Crosstube Assembly(412 Hi Hi Aft)	2.875Inches + 0.005 - 0.000	2.880 2.875		
5	Crosstube Assembly(412 Hi Hi Aft)	2.875Inches + 0.005 - 0.000	2.880 2.875		
6	Crosstube Assembly(412 Hi Hi Aft)	2.935Inches + 0.005 - 0.000	2.940 2.935		
7	Crosstube Assembly(412 Hi Hi Aft)	2.999Inches + 0.005 - 0.000	3.004 2.999		
8	Crosstube Assembly(412 Hi Hi Aft)	3.063Inches + 0.005 - 0.000	3.068 3.063		
9	Crosstube Assembly(412 Hi Hi Aft)	3.125Inches + 0.005 - 0.000	3.130 3.125		
10	Crosstube Assembly(412 Hi Hi Aft)	3.250Inches + 0.005 - 0.000	3.255 3.250		
11	Crosstube Assembly(412 Hi Hi Aft)	0.500Inches ± 0.010	0.510 0.490	Radius	
12	Crosstube Assembly(412 Hi Hi Aft)	8.440Inches ± 0.060	8.500 8.380		
13	Crosstube Assembly(412 Hi Hi Aft)	3.250Inches + 0.000 - 0.010	3.250 3.240		
14	Crosstube Assembly(412 Hi Hi Aft)	2.875Inches + 0.005 - 0.000	2.880 2.875		
15	Crosstube Assembly(412 Hi Hi Aft)	2.875Inches + 0.005 - 0.000	2.880 2.875		
16	Crosstube Assembly(412 Hi Hi Aft)	2.935Inches + 0.005 - 0.000	2.940 2.935		
17	Crosstube Assembly(412 Hi Hi Aft)	2.999Inches + 0.005 - 0.000	3.004 2.999		
18	Crosstube Assembly(412 Hi Hi Aft)	3.063Inches + 0.005 - 0.000	3.068 3.063		
19	Crosstube Assembly(412 Hi Hi Aft)	3.125Inches + 0.005 - 0.000	3.130 3.125		
20	Crosstube Assembly(412 Hi Hi Aft)	3.250Inches + 0.005 - 0.000	3.255 3.250		
21	Crosstube Assembly(412 Hi Hi Aft)	151.380Inches ± 0.060	151.440 151.320		

Plex 6/22/18 11:29 AM dart.lacelle.linda

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Description Work Order Deviation				Disposition			Completed By																		
Root Cause		FAULT CATEGORY																							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	OTHER : ☐																			

Work Order ID 152058

Wednesday, October 19, 2016 1:20:56 PM

~~*ENG Testing*~~
152058

Page 1

Item ID: D412-596-203 Accept *N900040100* Setup Start *NS1*
 Revision ID: URF 14-644 Stop *NS2*
 Item Name: Stainless Steel Aft Crosstube - Extended Height 39"
 Start Date: 11/1/2016 Start Qty: 1.00 *1* Cust Item ID:
 Required Date: 11/17/2016 Req'd Qty: 1.00 *1* Customer:
 Reference: RD16682-01

Approvals: Process Plan: JA Date: 16-10-19 Tooling: Date: Run Start *NR1*
 QC: Date: SPC (Y/N): Date: Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr	B U/R
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Doc.Control -USB or Paperwork	Document Control DOCUMENT CONTROL	0.00							
Memo	Photocopy bluefile & type labels per PPPD412-596-203	0.00	CHG001						

110	BENDING MACHINE - CROSSTUBES	0.02							
*1	Memo	0.52							
	Bend tube as per Dwg D412-596-203 using CNC bender program _____ and Folio FT _____								
	USE (4) DT9824 SHIM BLOC TO CHECK STRAIGHTNESS*								
	Dimensional Check	0.00							
	UT LINES***	0.00							

140
140
QC
Quality Control

FEB 13 2017